

Remarks

Reconsideration of the application is respectfully requested in view of the foregoing amendments and following remarks. Claims 1-7, 9-15, 37-42, 44, 46 and 47 are pending in the application. No claims have been allowed. Claims 1, 37, 44 and 47 are independent.

Objection to Information Disclosure Statement

The Action objects to the Information Disclosure Statement received by the Office on April 13, 2006 ("IDS"). The Action indicates that the IDS "fails to comply with 37 CFR 1.98(a)(1)" but does not indicate a specific objection to the IDS. [See Action at p. 2.] The Action indicates that the IDS was "placed in the application file, but the information referred to therein has not been considered." [See *id.*]

Applicants note that an initialed copy of the Form 1449 that accompanied the IDS is available on PAIR via a link entitled "List of References cited by applicant and considered by examiner" indicating the Examiner has considered the references cited thereon. Applicants enclose herewith a copy of the initialed Form 1449 (Exhibit A) and a copy of the PAIR page that links to the initialed Form 1449 (Exhibit B).

The objection to the IDS should be withdrawn. Such action is respectfully requested.

Drawings

The Action does not indicate whether the drawings have been accepted by the Examiner. Applicants respectfully request approval of the drawings currently on file.

Response to § 112 Rejection

The Action rejects Claim 47 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. [See Final Action at pp. 4-5.] As amended, claim 47 recites in part:

receiving image segment information that defines two or more image segments in the high dynamic range image; and
in response to a cursor passing over a first image segment of the two or more image segments in the high dynamic range image:
applying tone mapping to the first image segment; and

displaying the first image segment in accordance with at least one display parameter corresponding to the tone mapping that differs from a corresponding display parameter for a second image segment of the two or more image segments in the high dynamic range image.

Claim 47 complies with 35 U.S.C. § 112, second paragraph. Applicants respectfully request that the rejection of amended claim 47 under § 112 be withdrawn.

Response to § 103(a) Rejections

The Final Action rejects claims 1-7, 9-15, 37-42, 44, 46 and 47 under 35 U.S.C. § 103(a). Applicants respectfully traverse these rejections.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. In addition, the prior art reference (or references when combined) must teach or suggest all the claim limitations. [See MPEP § 2142.] Motivations to combine or modify references must come from the references themselves or be within the body of knowledge in the art. [See MPEP § 2143.01.]

Applicants respectfully submit that the claims in their present form are allowable over the applied art, as explained in detail below.

A. Rejection of Claims 1-4, 14, 15, 37, 38, 40 and 44

In the Action, the Office rejects claims 1-4, 14, 15, 37, 38, 40 and 44 under § 103(a) in view of U.S. Patent Application Publication No. 2005/0185055 A1 (“Miller”), U.S. Patent No. 5,818,975 to Goodwin (“Goodwin”), U.S. Patent Application Publication No. 2004/0125124 A1 (“Kim”), and Industrial Light & Magic, “OpenEXR: About OpenEXR,” 2 pp. (2003) (“OpenEXR”).

Applicants respectfully submit that the claims in their present form are allowable over the art applied by the Examiner.

Claims 1-4, 14 and 15

As amended, independent claim 1 recites in part:

- receiving high dynamic range image information, wherein the high dynamic range image information defines the at least one high dynamic range image;
- receiving split-pane view information, the split-pane view information defining two or more image regions of the at least one high dynamic range image; and
- displaying an image view on the display having the lower dynamic range, the image view comprising:
 - a first image region of the two or more image regions, the first image region constructed from a first portion of the high dynamic range image information; and
 - a second image region of the two or more image regions, the second image region constructed from a second portion of the high dynamic range image information, the second image region displayed in accordance with at least one display parameter that differs from a corresponding display parameter for the first image region;

wherein the split-pane view information comprises at least one movable split position; and

wherein a change in the movable split position results in a change of the first portion of the high dynamic range image information from which the first image region is constructed, and a change of the second portion of the high dynamic range image information from which the second image region is constructed.

As amended, independent claim 44 recites in part:

- means for processing split-pane view information, the split-pane view information defining two or more image regions of the at least one high dynamic range image; and
- means for causing a computer to display an image view on a display having a lower dynamic range than the high dynamic range image, the image view comprising:
 - a first image region of the two or more image regions, the first image region constructed from a first portion of the high dynamic range image information; and
 - a second image region of the two or more image regions, the second image region constructed from a second portion the high dynamic range image information, the second image region displayed in accordance with at least one display parameter that differs from a corresponding display parameter for the-first image region;

wherein the split-pane view information comprises at least one movable split position; and

wherein a change in the movable split position results in a change of the first portion of the high dynamic range image information from which the first image region is constructed, and a change of the second portion of the high dynamic range image information from which the second image region is constructed.

The Examiner takes the position that “Miller does not expressly teach HDR images, but clearly would suggest such a limitation,” that OpenEXR teaches “[r]eceiving high dynamic range information, wherein the high dynamic range information defines a high dynamic range image,” and that Kim teaches “a change in the movable split portion results in a change of the first portion of the high dynamic range information from which the first image region is constructed, and a change of the second portion of the high dynamic range information from which the second image region is constructed.” [See Action at pp. 6-8.] Regarding claim 44, “The rejection to claim 1 is incorporated in its entirety.” [See *id.* at p. 9.]

Applicants respectfully disagree that the applied art teaches or suggests the above-cited language of claims 1 and 44, respectively. In particular, Applicants respectfully disagree with the Examiner’s characterization of the teaching of Kim. Kim describes splitting a graphical representation of a “visual rhythm” into two or more windows. [See Kim at ¶¶ [0231]-[0237]. The “visual rhythm” described in Kim is a graphical representation of how a video sequence changes over time. For example, Kim states at paragraph [0021]:

Visual rhythm is a technique wherein a two-dimensional image representing a motion video stream is constructed. . . . The visual image methodology uses selected pixel values from each frame (usually values along a horizontal, vertical or diagonal line in the frame) as line images, stacking line images from subsequent frames alongside one another to produce a two-dimensional representation of a motion video sequence. The resultant image exhibits distinctive patterns – the “visual rhythm” of the video sequence – for many types of video editing effects

The purpose and effect of splitting visual rhythm is to allow a user to look at different time slices of a video sequence in different windows.

Kim’s description of splitting visual rhythm into different windows to allow a user to look at different time slices in different windows does not teach or suggest the above-cited language of claims 1 and 44, respectively. Although Kim states that “[t]he relative length of the split windows 1604 and 1606 can be adjusted” [see *id.* at ¶ [0237]], it would not make sense to combine splitting visual rhythm into different *time slice windows*, as described in Kim, with the

viewing of still images described in Miller. Even if Kim were combined with Miller, OpenEXR and Goodwin, and motivation could be found to make such a combination, a combination of Kim, Miller, OpenEXR and Goodwin would still not teach or suggest the recited language of amended independent claims 1 and 44, respectively. For example, splitting views of still images into different time slice windows does not teach or suggest “the split-pane view information defining *two or more image regions of the at least one high dynamic range image*,” and “wherein a change in the movable split position results in a change of the first portion of the high dynamic range image information from which the first image region is constructed, and a change of the second portion of the high dynamic range image information from which the second image region is constructed,” as recited in amended claims 1 and 44.

Claims 1 and 44 are allowable. Claims 2-4 and 14-15 depend from claim 1 and should be allowable for at least the reasons given above in support of claim 1. Accordingly, the rejections of claims 1-4, 14-15 and 44 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

The rejections of dependent claims 5-7, 9-10 and 11-13 are addressed below.

Claims 37-38 and 40

As amended, independent claim 37 recites in part:

... a high dynamic range image viewer operable to output an image view comprising plural image regions of at least one high dynamic range image constructed from high dynamic range image information to a display having a lower dynamic range than the at least one high dynamic range image, the image view based at least in part on split-pane view information;

wherein a first image region of the plural image regions of the at least one high dynamic range image is displayed in accordance with at least one display parameter that differs from a corresponding display parameter for a second image region of the plural image regions of the at least one high dynamic range image;

wherein the split-pane view information comprises at least one movable split position; and

wherein a change in the movable split position results in a size change of at least the first and second image regions.

The Examiner takes the position that Kim teaches “a change in the movable split position results in a size change of at least the first and second image regions.” [See Action at p. 11.] Applicants respectfully disagree.

Kim's description of splitting visual rhythm into different windows to allow a user to look at different time slices in different windows does not teach or suggest the above-cited language of claim 1. Although Kim states that "[t]he relative length of the split windows 1604 and 1606 can be adjusted" [*see id.* at ¶ [0237]], it would not make sense to combine splitting visual rhythm into different *time slice windows*, as described in Kim, with the viewing of still images described in Miller. Even if Kim were combined with Miller, OpenEXR and Goodwin, and motivation could be found to make such a combination, a combination of Kim, Miller, OpenEXR and Goodwin would still not teach or suggest the recited language of amended independent claim 37. For example, splitting views of still images into different time slice windows does not teach or suggest "an image view comprising plural image regions of at least one high dynamic range image constructed from high dynamic range image information to a display having a lower dynamic range than the at least one high dynamic range image, the image view based at least in part on split-pane view information," "wherein a first image region of the plural image regions of the at least one high dynamic range image is displayed in accordance with at least one display parameter that differs from a corresponding display parameter for a second image region of the plural image regions of the at least one high dynamic range image," and "wherein a change in the movable split position results in a size change of at least the first and second image regions," as recited in amended claim 37.

Claim 37 is allowable. Claims 38 and 40 depend from claim 37 and should be allowable for at least the reasons given above in support of claim 37. Accordingly, the rejections of claims 37, 38 and 40 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

The rejections of dependent claims 39, 41 and 42 are addressed below.

B. Rejection of Claims 5-7

In the Action, the Office rejects claims 5-7 under § 103(a) in view of Miller, Kim, OpenEXR and U.S. Patent No. 6,597,468 to Inuiya ("Inuiya"). [*See Action at pp. 13-14.*]

Applicants respectfully submit that the claims in their present form are allowable over the art applied by the Examiner. Inuiya describes "wide dynamic range processing" that "merges low-sensitivity and high-sensitivity images into a single image." [*See Inuiya at col. 5, lines 18-*

20.] However, the applied art does not teach or suggest the recited language of independent claim 1, from which claims 5-7 depend.

Because the applied art does not teach or suggest at least one element of independent claim 1, claims 5-7 are allowable at least for the reasons given above for the allowability of their parent claim. Therefore, the rejection of claims 5-7 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

C. Rejection of Claims 9 and 10

In the Action, the Office rejects claims 9 and 10 under § 103(a) in view of Miller, Kim, OpenEXR and Siprut, *Adobe Photoshop Handbook* (1995) (“Photoshop”). [See Action at pp. 14-15.]

Applicants respectfully submit that the claims in their present form are allowable over the art applied by the Examiner. The examiner takes the position that Photoshop teaches “geometric transformations” and “blending methods.” [See *id.* at p. 15:] However, the applied art does not teach or suggest the recited language of independent claim 1, from which claims 9 and 10 depend.

Because the applied art does not teach or suggest at least one element of independent claim 1, claims 9 and 10 are allowable at least for the reasons given above for the allowability of their parent claim. Therefore, the rejection of claims 9 and 10 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

D. Rejection of Claim 11

In the Action, the Office rejects claim 11 under § 103(a) in view of Miller, Kim, OpenEXR, Photoshop, and Durand et al., “Fast Bi-lateral Filtering for the Display of High-Dynamic-Range Images,” (2002) (“Durand”). [See Action at pp. 15-17.]

Applicants respectfully submit that the claims in their present form are allowable over the art applied by the Examiner. Durand provides descriptions of “a fast and robust operator that takes a high-dynamic-range image as input, and compresses the contrast while preserving details of the original image” [see Durand at p. 257, right column], but the applied art does not teach or suggest the recited language of independent claim 1.

Because the applied art does not teach or suggest at least one element of independent claim 1, claim 11 is allowable at least for the reasons given above for the allowability of its parent claim. Therefore, the rejection of claim 11 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

E. Rejections of Claims 12, 42 and 46

In the Action, the Office rejects claims 12, 42 and 46 under § 103(a) in view of Miller, Kim, OpenEXR, and U.S. Patent Application Publication No. 2003/0142126 (“Estrada”). [See Action at pp. 17-18.]

The applied art does not teach or suggest each and every element of dependent claims 12, 42 and 46. Estrada provides descriptions of a “system and method . . . for dynamically generating viewable graphics,” but the applied art does not teach or suggest the recited language of independent claims 1 and 37, respectively. Applicants also respectfully disagree with the Examiner’s characterization of claim 46 as reciting “a mere duplication of parts” and submit that claim 46 recites additional patentable subject matter over the recited language of its parent claim.

Because the applied art does not teach or suggest at least one element of independent claims 1 and 37, respectively, claims 12, 42 and 46 are allowable at least for the reasons given above for the allowability of their respective parent claims. Therefore, the rejections of claims 12, 42 and 46 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

F. Rejection of Claim 13

In the Action, the Office rejects claim 13 under § 103(a) in view of Miller, Kim, OpenEXR, U.S. Patent No. 6,219,459 to Kurashige et al. (“Kurashige”), U.S. Patent No. 6,424,287 to Doerry et al. (“Doerry”), U.S. Patent No. 6,770,879 to Azordegan et al. (“Azordegan”), and U.S. Patent Application Publication No. 2004/0184059 (“Chun”). [See Action at pp. 18-20.]

The applied art does not teach or suggest each and every element of dependent claim 13. Kurashige, Doerry, Azordegan and Chun do not teach or suggest the recited language of independent claim 1. Because the applied art does not teach or suggest at least one element of independent claim 1, claim 13 is allowable at least for the reasons given above for the

allowability of its parent claim. Therefore, the rejection of claim 13 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

G. Rejection of Claim 39

In the Action, the Office rejects claim 39 under § 103(a) in view of Miller, Kim, OpenEXR, and U.S. Patent Application Publication No. 2002/0154144 (“Lofgren”). [See Action at p. 20.]

The applied art does not teach or suggest each and every element of dependent claim 39. Lofgren provides descriptions of derivative image management using digital watermarks, but the applied art does not describe high dynamic range images and does not teach or suggest the recited language of independent claim 37.

Because the applied art does not teach or suggest at least one element of independent claim 37, claim 39 is allowable at least for the reasons given above for the allowability of its parent claim. Therefore, the rejection of claim 39 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

H. Rejection of Claim 41

In the Action, the Office rejects claim 41 under § 103(a) in view of Miller, Kim, OpenEXR, and U.S. Patent No. 6,546,144 to Fukuhara et al. (“Fukuhara”). [See Action at pp. 21-22.]

The applied art does not teach or suggest each and every element of dependent claim 41. Fukuhara provides descriptions of a “method and apparatus whereby a thumbnail image or an image converted in resolution can be stored or displayed,” but the applied art does not teach or suggest the recited language of independent claim 37.

Because the applied art does not teach or suggest at least one element of independent claim 37, claim 41 is allowable at least for the reasons given above for the allowability of its parent claim. Therefore, the rejection of claim 41 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

I. Rejection of Claim 47

In the Action, the Office rejects claim 47 under § 103(a) in view of Miller, OpenEXR, and “HDRView: Version 1.2” (document dated April 11, 2000; downloaded from <http://athens.ict.usc.edu/FiatLux/hdrview>) (“HDRView”). [See Action at pp. 22-23.]

Applicants respectfully submit that claim 47 in its present form is allowable over the art applied by the Examiner.

As amended, independent claim 47 recites in part:

receiving image segment information that defines two or more image segments in the high dynamic range image; and
in response to a cursor passing over a first image segment of the two or more image segments in the high dynamic range image:
applying tone mapping to the first image segment; and
displaying the first image segment in accordance with at least one display parameter corresponding to the tone mapping that differs from a corresponding display parameter for a second image segment of the two or more image segments in the high dynamic range image.

For example, the Application states at page 15, line 24 – page 16, line 1:

The segment viewer is similar to the sliding-window viewer and the rectangle viewer. However, in the segment viewer, the regions of interest are segments computed using image segmentation techniques. A user can choose segments by passing a cursor over portions of the image. As the cursor passes over a segment, the segment viewer applies tone mapping to the segment, separate from any tone mapping applied to the background image. A user can toggle (e.g., with a mouse or keyboard operation) tone mapping so that multiple segments can be viewed in their tone-mapped state at once.

Applicants respectfully disagree that the applied art teaches or suggests the above-cited language of claim 47. Even if Miller were combined with HDRView and OpenEXR, and motivation could be found to make such a combination, a combination of Miller, HDRView and OpenEXR would still not teach or suggest the recited language of amended independent claim 47. For example, Miller, HDRView, and OpenEXR do not mention image segment information as recited in claim 47. Therefore, a combination of Miller, HDRView and OpenEXR would not teach or suggest, for example, “receiving image segment information that defines two or more image segments in the high dynamic range image,” and “in response to a cursor passing over a first image segment of the two or more image segments in the high dynamic range image: applying tone mapping to the first image segment; and displaying the first image segment in

accordance with at least one display parameter corresponding to the tone mapping that differs from a corresponding display parameter for a second image segment,” as recited in amended claim 47.

Claim 47 is allowable. Accordingly, the rejection of claim 47 under 35 U.S.C. § 103(a) should be withdrawn. Such action is respectfully requested.

Request For Interview

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. Applicants submit the foregoing formal Amendment so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

Conclusion

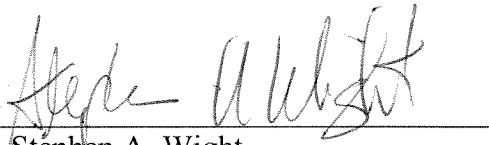
The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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By


A handwritten signature in dark ink, appearing to read "Stephen A. Wight", is written over a horizontal line.

Stephen A. Wight

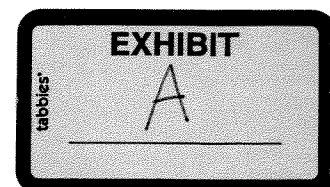
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | Attorney Docket Number | | 3382-66131-01 | |
| | | Application Number | | 10/713,539 | |
| | | Filing Date | | November 14, 2003 | |
| | | First Named Inventor | | Toyama | |
| | | Art Unit | | 2173 | |
| | | Examiner Name | | Eric V. Woods | |
| Examiner's Initials* | Cite No. (optional) | OTHER DOCUMENTS | | | |
| EW | | Larson, "Overcoming Gamut and Dynamic Range Limitations in Digital Images," <i>Color Imaging Conference</i> , 6 pp. Scottsdale, Arizona (1998) | | | |
| EW | | Mantiuk et al., "Perception-Motivated High Dynamic Range Video Encoding," <i>ACM Trans. Graphics</i> , Vol. 23, No. 3, pp. 733-741 (2004) | | | |
| EW | | "The Magic Lens Interface Project," 1 p. (document dated Sept. 16, 1998) [downloaded from the World Wide Web on March 10, 2006] | | | |
| EW | | Xerox Corp., "Magic Lens Demo," 2 pp. (document dated 1996) [downloaded from the World Wide Web on March 10, 2006] | | | |
| EW | | Xu et al., "High-Dynamic-Range Still-Image Encoding in JPEG 2000," <i>IEEE Computer Graphics & Applications</i> , pp. 57-64 (Nov./Dec. 2005) | | | |
| EW | | Ward et al., "Subband Encoding of High Dynamic Range Imagery," <i>Proceedings of the 1st Symposium on Applied Perception in Graphics and Visualization</i> , pp.83-90 (2004) | | | |
| | | | | | |
| FOREIGN PATENT DOCUMENTS | | | | | |
| Examiner's Initials* | Cite No. (optional) | Country | Number | Publication Date | Name of Applicant or Patentee |
| EW | | EP | 93308763.7 | 06/09/1994 | IBM |
| | | | | | |

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|--|----------------------------|
| EXAMINER SIGNATURE:  | DATE CONSIDERED: 9/2/06 |
| * Examiner: Initial if reference considered, whether or not in conformance with MPEP 609. Draw line through cite if not in conformance and not considered. Include copy of this form with next communication to applicant. | |

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Patent Application Information Retrieval

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Application Number

SUBMIT

10/713,539 High dynamic range image viewing on low dynamic range

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|------------------|---------------------|--------------------|-----------------|---------------------|-------------------|------------------|
| Application Data | Transaction History | Image File Wrapper | Continuity Data | Published Documents | Publication Dates | Address Attorney |
|------------------|---------------------|--------------------|-----------------|---------------------|-------------------|------------------|

This application is officially maintained in electronic form. To View: Click the Print: Check the desired document(s) and click StartDownload.

| Mail Room Date | Document Description | Pa |
|----------------|---|----|
| 09-06-2006 | Non-Final Rejection | |
| 09-06-2006 | List of references cited by examiner | |
| 09-06-2006 | Index of Claims | |
| 09-06-2006 | Search information including classification, databases and other search related notes | |
| 08-25-2006 | Examiner's search strategy and results | |
| 06-02-2006 | Miscellaneous Incoming Letter | |
| 05-01-2006 | Examiner Interview Summary Record (PTOL - 413) | |
| 04-25-2006 | Applicant summary of interview with examiner | |
| 04-13-2006 | List of References cited by applicant and considered by examiner | |
| 04-13-2006 | Fee Worksheet (PTO-06) | |
| 04-13-2006 | Amendment Submitted/Entered with Filing of CPA/RCE | |
| 04-13-2006 | Claims | |
| 04-13-2006 | Applicant Arguments/Remarks Made in an Amendment | |
| 04-13-2006 | Request for Continued Examination (RCE) | |
| 04-13-2006 | Information Disclosure Statement (IDS) Filed | |

EXHIBIT

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